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HIV/AIDS awareness and attitudes of mineworkers: A case study

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The central question to be examined revolves around the attitudes and awareness of HIV/AIDS among mineworkers at a mine. Semi-standardised questionnaires were used to conduct in-depth interviews on a one-on-one basis. The findings revealed that workers had a great lack of knowledge about AIDS. While some workers had a detailed knowledge of the disease and its prevention, others were either completely ignorant about it or were in denial of its existence. The study serves as a tool and a framework of reference to the mine management on the areas of concern, to put great emphasis on IEC, in order to combat the spread of the disease in the mine.

Recommendations are proposed for future research, policy making and practice in the area of HIV/AIDS. These will be in line with the factors influencing mineworkers' perceptions of the epidemic.

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Introduction

The impact of HIV/AIDS on the South African labour market poses a potential threat to the institutional and legislative transformation of the labour market in the post-apartheid era. The negative impact of HIV/AIDS may adversely affect efforts directed at addressing structural problems, including high levels of unemployment, the skills shortage and high levels of income inequality.

The aim of this study is to analyse the awareness level and attitudes of mineworkers regarding HIV/AIDS. It focuses on the knowledge level, attitudes, practices and behavioural factors central in influencing the miners' views of the epidemic. For this research, a qualitative design was used for 50 employees by means of structured interviews.

Problem statement

The first official AIDS story in South Africa was recorded in 1982, when two men, said to be homosexuals, died of the disease (Togni, 1997:25). Although the first cases of AIDS occurred in homosexuals, most HIV incidences in South Africa are currently spread through heterosexual contact. Transmission through other modes such as intravenous drug use, blood on blood contact and homosexual contact constitute a very small proportion of all infections. It is estimated that over 5 million South Africans are living with AIDS and unless major behavioural changes are adequately promoted and realized, this figure is projected to more than double over the next decade. (Kaiser Family Foundation, 2000; Shongwe, 2001. The 2000 statistics revealed that HIV prevalence in South Africa increased thirty fold in a period of 10 years (Marais, 2000:7).

By the end of 2002, the number of people living with HIV/AIDS worldwide was estimated at 42 million. Of these, 3.2 million were children under the age of 15 years (UNAIDS & WHO, 2002). More than 90 per cent of all adult HIV infections occur in developing countries and two-thirds occur in Sub-Saharan Africa. The high levels of infection in Sub-Saharan Africa will have a marked effect on population growth in the long run, as is already happening. The South African population was expected to grow from 43,7 million in 1999 to 51.3 million in 2010 in the absence of HIV/AIDS. However, because of the incidence of HIV/AIDS, the population is expected to reach only 47 million in 2010. The populations of Botswana and Zimbabwe are also expected to be about 20 per cent less in 2010 than it would have been in the absence of AIDS (Kaiser Family Foundation, 2000).

HIV/AIDS is one of the leading causes of death in Sub-Saharan Africa and is a major contributor to the infectious disease component of the present and future disease burden. In South Africa, the number of deaths due to AIDS is expected to increase from 120,000 in 2000 to between 545,000 and 635,000 in 2010 (Kaiser Family Foundation, 2000). Abt Associates (2000) project that by 2010 the labour force will, in the absence of substitution, decline by 8 per cent for the highly skilled, 10 per cent for the skilled and 11-13 per cent for the semi- and unskilled. Quatteck (2000) predicts an average decline of ten per cent over the period 2000-2015, across all skills levels. As a result of this it may be difficult to maintain and increase the pool of sufficiently skilled people needed to match the skills demand as well as the expected economic growth. Vass (2002) reported that this situation may not ease, as HIV/AIDS is likely to exacerbate the current short supply of skilled labour in the absence of sufficient replacements and retraining.

Table 1: HIV-positive per 100 workers by main economic sectors

Sector	2000	2005	2010	2015
Finance and insurance	8,9	12,4	12,5	11,7
Business service	11,9	15,6	15,1	14,3
Communication	12,1	16,5	16,3	15,3
Health	14,9	20,0	19,0	16,6
Metals	15,0	19,9	19,3	17,8
Forestry products	15,2	20,2	19,8	18,6
Machinery	15,9	21,2	20,8	19,5
Retail	16,2	21,3	20,7	19,3
Chemicals	16,6	21,6	20,7	19,3
General government	17,2	24,5	26,0	26,1
Consumer manufacturing	17,3	23,0	22,9	21,3
Agriculture, forestry and fishing	17,3	23,2	23,2	21,8
Accommodation and catering	17,9	23,0	22,2	20,8
Construction	18,2	23,9	23,4	22,1
Transport and storage	18,5	23,5	22,0	20,2
Mining	24,1	29,3	26,4	24,4

Source: WEFA as cited in Quattek, 2000:49.

The ING Barings study (as cited in Quattek, 2000:49) confirms company-based reports by indicating that HIV infection rates are higher than the rates of other adult diseases, as shown in Table 1. It also confirms that there is a sector gradient, in that HIV prevalence rates differ from sector to sector. The most susceptible sector in terms of the proportion of HIV-positive workers are the mining sector, peaking at 29,3 per cent in 2005, and the general government sector, peaking at 26,4 per cent, albeit five years later. South Africa has a highly developed mining sector. Most of the growth in the HIV infection rate occurs in the period 2000-2005, with marginal declines throughout the periods leading up to 2010 and 2015.

The epidemic also affects many people's life expectancy at birth. During the period 1996-1999, the life expectancy in the era of AIDS in South Africa declined from 63 to 55 years. In neighbouring countries also hard hit by the disease, namely Botswana and Zimbabwe, life expectancy dropped from 65 to 47 years and from 53 to 44 years respectively (Sunter & Whiteside, 2000). Deaths of children and young adults mean that a large number of productive years of life are lost, translating in a loss of the most economically active population.

Since most mining is conducted at sites far from home centres, these men are accommodated in single sex quarters where they are not allowed to bring along their families. The conditions that mineworkers live in are ideally suited to the spread of HIV, both at the mines and in their rural homes.

The country's mining sector has been identified as one of the sectors with the fastest growing HIV infection rate. The mining industry is one of the industries in which education is not a prerequisite to employment. The average mineworker is either illiterate or semi-literate. Low levels of education translate into thwarted knowledge of critical issues surrounding HIV/AIDS and its prevention. Consequently, it is not surprising to learn how some mineworkers misconceive the epidemic.

Most miners live lonely lives in single sex dormitories, often far away from their families. Stress and loneliness are among the driving forces to indulge in alcohol and in some cases drugs for recreation. While under the influence of intoxicating substances, people tend to forget the dangers of HIV infection and fail to practice safe sex. Mineworkers are no exceptions, more so because in bars, sex workers are present, on business. Despite the sex workers, somewhat detailed knowledge of HIV/AIDS, their need for money means that they do not have the power to negotiate safer sex (Garbus, 1998).

Combating HIV infection in South African mining communities is a high priority because mining is a vital part of the economy. The working and living conditions of the miners make them particularly vulnerable to infection and migrant workers may spread the virus to their home communities (Meekers, 1999:39).

The grassroots level mineworkers are based either on the surface (plants) or underground, but the majority of these workers are hostel-based underground mineworkers. The underground workers are categorised as follows:

- Loco drivers – those who drive machineries that transport ore from one point to the other within the underground area.
- Machine operators – those who load ore into trucks and transport it from the underground area to the plant for mineral extraction.
- Belt attendants – those who ensure that conveyor belts are in operation at all times.
- Drilling operators – those who drill holes in preparation for blasting.
- Blasters – those who charge explosives and blast the ore.

- Stoepmen – those who construct anchors to prevent rock falls.
- General workers – those who provide general services such as sweeping and overall cleaning of the underground area.

The above activities are in general hazardous and workers are usually at risk of injury while performing them. South African hostel-based underground mineworkers are particularly vulnerable to HIV infection because of the working and living conditions to which they are exposed. Firstly, the stress of living apart from their families for extended periods of time drives them to resort to commercial sex. Because of lack of proper information, education and communication (IEC) on HIV/AIDS and preventative measures, coupled with denial of such a condition, the use of condoms is not common among mineworkers. Meekers (1999) further postulates that low condom use is attributable to the fact that these workers dislike condoms because it causes a loss of sensitivity; because they are ignorant about using them; because they trust their sexual partners and because they question the mine management's motivations for promoting condom use. Secondly, they generally have dangerous jobs in which injuries, or in some extreme cases, deaths occur. For mineworkers who face such a high risk of work-related death or injury, the possibility of dying from a slow, chronic and invisible infection seems remote.

The situation described above prompted this research. The objective with this research was to analyse and understand the way in which mineworkers perceive the HIV/AIDS epidemic and how their perceptions impact on their day-to-day sexual behaviour, especially with regard to condom use.

In general, more educated people lead healthier and more productive lives. They have better jobs, greater access to information than those who are illiterate, semi-literate or uneducated, and are more likely to make well-informed decisions and act on that information.

Mineworkers fall in the semi-literate and illiterate category; hence it may be assumed that the duties they perform are of a lower rank than those of the professional staff. They have less access to information on the fundamental issues surrounding HIV/AIDS, including the mere fact of the existence of the pandemic, the fact that AIDS is a fatal disease, the mode of transmission of the virus and the importance of preventative measures such as the use of condoms, besides only knowing that AIDS is one of the diseases that kill. In recent years several sensitisation and awareness creation campaigns were launched across the country in order to address the dangers of the epidemic. Efforts have also been made to include HIV/AIDS education in the Adult Basic Education and Training programmes which are already in place on the mines. Yet, in spite of these campaigns and efforts, mineworkers remain vulnerable to HIV because they do not know the most basic facts about the epidemic.

However, knowledge alone does not automatically translate into appropriate modifications in sexual behaviour. The miners do not perceive themselves as being at risk of infection, for instance, and hence they do not institute precautionary measures (Campbell & Williams, 1999). Their knowledge is further thwarted by their line of thinking about the visibility of the signs and symptoms of the virus. In a study cited by UNAIDS (2000) in Carletonville, a town which is home to about 100,000 miners, only 40 per cent of men or woman knew that an individual can live with the virus for many years without any outward sign of infection. Around a third of respondents were mistakenly convinced that HIV positive people would show symptoms of their infection, while a quarter had no idea what to expect.

While it is essential to expose the mineworkers to training on the modes of transmission, it is also of the utmost importance to bring to their attention the activities that are not associated with transmission of the virus, as well as how to take care of the infected and affected. This is in view of the stigma attached to the epidemic that often results in a number of negative reactions from people after learning about the carrier's HIV/AIDS status. Discrimination and rejection are the most cited reactions, and because of fear of these reactions people keep silent about their status.

According to Van Aardt (1999) about 21% of South Africa's workforce will be infected by 2010 and about 3 per cent will have full-blown AIDS. In the same period, the number of employees lost to AIDS could amount to around 40 per cent to 50 per cent of the current workforce in some South African companies (Kaiser Family Foundation, 2000).

Vass (2002) reports that the macro-economic modelling results indicate that, given the impact of HIV/AIDS, labour force growth will decline, resulting in a smaller labour force compared to a no-AIDS scenario. Quattek (2000) predicts an 18% decline in the labour force by 2015, while Abt/Metropolitan predicts a decline of 21% by 2015 (Bureau for Economic Research, 2001). The projected reduction in the labour force follows from the projected reduction in the population growth rate to zero per cent in 2009 and a negative growth rate of -0,5% by 2015.

Zimbabwe is one of the African countries in which the epidemic has taken its toll. National adult HIV prevalence in 2002 was estimated at 33,7% (UNAIDS & WHO, 2002). According to the projections computed using the ILO software, the country's labour force was estimated to be 2,3% smaller in 1995 because of the impact of AIDS; and in 2015 it is expected to be about 17,5% smaller than it would have been without HIV/AIDS (ILO, 2000).

Unpredicted loss to the workforce also impacts on productivity, especially in labour intense industries and industries in which individuals lost to the workforce are critical to the production process. The mining industry is an example of a sector where labour intensity is critical to the production process in South Africa. South Africa's mining industry employs millions of people, most of whom are migrants, and it accounts for 60% of export earnings (Garbus, 1998). Yet some estimates, specifically in the Carletonville mining communities, show that about 30% of

hostel-based underground mineworkers are HIV positive (Marais, 2000).

Principal questions to be addressed

The central question to be examined revolves around the attitudes and awareness of HIV/AIDS among mineworkers at a mine. Specific issues which are involved need clarification and investigation. These include:

- The degree to which mineworkers are aware of HIV/AIDS and preventative measures, and how this awareness impacts upon widely held beliefs about the disease and preventative measures, such as the use of condoms.
- Acceptability and respectability of co-workers who may be infected with the disease.
- Perception of mineworkers with regard to productivity or employability of persons living with HIV/AIDS at a mine in Gauteng.
- Investigation as how the availability of training regarding HIV/AIDS and participation in the IEC programmes are perceived.

Rationale

There has not been much research on the attitudes and perceptions of mineworkers regarding the epidemic, with the exception of the Carletonville intervention, which aims not only to reduce STDs, to promote awareness of HIV risks and to distribute condoms, but also to address the broader social, cultural and community contexts which facilitates HIV transmission (Campbell & Williams, 1999). Several published and unpublished studies on this issue have been of a quantitative nature and have failed to uncover the qualitative nature of the epidemic in the mining industry. Brink and Clausen (1987), in Campbell and Williams (1999:16), performed one such study among workers in South African gold mines. It revealed an HIV prevalence rate of 3% amongst mineworkers. The study only did a headcount and ignored the social and attitudinal dynamics of mineworkers regarding HIV/AIDS.

It was decided to use a qualitative approach for this study, due to the fact that previous researchers experienced problems regarding quantitative research on the topic of HIV/AIDS. According to Reid and Smith (1981) as cited in De Vos *et al.* (2002:105) the following characteristics is part of a qualitative approach:

- The researcher attempts to gain a first-hand, holistic understanding of phenomena of interest by means of a flexible strategy of problem formulation and data collection.
- This becomes shaped as the investigation proceeds.

- Methods such as participant observation and unstructured interviewing are used to acquire an in-depth knowledge used to guide further study.
- Qualitative methodology thus rests on the assumption that valid understanding can be gained through accumulated knowledge acquired first-hand by a single researcher.

The Carletonville project, on the other hand, first carried out a qualitative study of the psychosocial context of sexuality and disease among the miners, to investigate mineworkers' understanding of HIV as well as their perceptions of existing health and educational services in order to explore ways of enhancing existing HIV-related interventions.

The working and living conditions of the mineworkers make them more vulnerable to HIV infection and its spread; therefore it is important to determine how such working and living conditions impact upon their attitudes towards HIV/AIDS, and how these in turn impact on the HIV prevalence in the mines.

Methodology and data analysis

Research design

According to De Vos *et al.* (2002:272) there are five strategies of inquiry or traditions that could be used to design qualitative research:

1. Biography
2. Phenomenology
3. Grounded theory
4. Ethnography
5. Case Study

According to Creswell (1998:61) as cited in De Vos *et al.* (2002:275), a case study can be regarded as an exploration or in-depth analysis of a 'bounded system' (bounded by time and/or place) or a single or multiple case, over a period of time. The case being studied can refer to a process, activity, event, programme or individual or multiple individuals. The exploration and description of the case take place through detailed, in-depth data collection methods, involving multiple sources of information that are rich in context. These can include interviews, documents, observations or archival records. As such, the researcher needs to access to, and the confidence of, participants. Therefore, for this research, it was decided to use the case study-method.

The aim of this study is not to quantify responses, but to attempt to compile a mental picture of how mineworkers think and feel about HIV/AIDS. A qualitative method was chosen for this study because it best elucidates what people experience, how they interpret their experiences and how they structure the world in which they live (Schurink, Liebenberg & Schurik, 1993). Researchers therefore share in the understandings and perceptions of others and also explore the way in which people structure and give meaning to their daily lives. One author argues that researchers in these kinds of studies adopt an empathic understanding of

various social settings and the individuals who inhabit these settings (Berg, 1998).

Study population

The overall population for this study is all mineworkers in the mining industry. However, due to practical restraints on resources such as funds and time, convenience sampling of the mining areas was adopted and the researcher concentrated on one mine in Gauteng.

The total number of employees at the specific mine is 1 498. The target population consists of approximately 996 males. The sample (N=75) was drawn from those mineworkers who at the time of interviewing were participants of the Adult Basic Education Training (ABET) classes, because they were more available than those who were on duty fulltime. Due to a lack of sufficient funds and time constraints, only fifty mineworkers formed part of the final sample. All the ABET participants were males staying either at the hostel (38) or in a nearby township (12) less than ten kilometres away from the mine. All these men were married, with the minority (particularly those staying in the township) living with their families. Their ages ranged from 36-58 years, and the duration of their service as mineworkers ranged from 15 to 35 years.

Researchers frequently ask how they will know when enough participants have been interviewed. Some argue that the number should not be established ahead of time. Others discuss 'snowballing', while others use purposive sampling. There are, however, two criteria for 'enough'. The first is sufficiency. Are there sufficient numbers to reflect the range of participants and sites that make up the population so that others outside the sample might have a chance to connect to the experience of those in it? The other criterion is saturation of information. This is the point in the study where the researcher begins to hear the same information repeatedly being reported, and he no longer learns anything new (De Vos *et al.*, 2002:300).

This study adopted a judgemental sampling technique for the sample size. Judgemental sampling uses the judgement of an expert in selecting unique cases that are especially informative (Neuman, 1997). The instructors of the ABET classes had daily interaction with the respondents and were therefore helpful in identifying the people they knew were informative and not shy to divulge the information needed. This made the process of interviewing easy, as the interviewees themselves were willing to participate, given that their instructors had faith in them to be assertive.

Questionnaire design

A questionnaire was designed which had a cover letter explaining the nature of the study. Because the topic being studied is sensitive, a cover letter was also essential to assure respondents of anonymity and confidentiality. The questionnaire consisted of three sections, namely biographical information; knowledge, attitudes and practices regarding HIV/AIDS; and a section on training regarding

HIV/AIDS. The questions posed were a mixture of open-ended and closed-ended questions.

Interviewing

The study used semi-standardised questionnaires to conduct in-depth interviews on a one-on-one basis. The interviews were conducted at the Administration block for the part-time participants and at the hostel premises for the full-time participants. Before the interviewing, the researcher addressed each group, which served as an ice-breaker and to gain their confidence.

The respondents were once again reassured of confidentiality and anonymity. To ensure anonymity, the names of the respondents were not recorded during the interviews. The interviews were neither video taped or audio taped. All the information gathered was transcribed on the questionnaire. The length of the interviews varied from 25 to 40 minutes, depending on the interviewee's level of understanding of the questions posed. The whole process of interviewing took two weeks.

Results

According to De Vos *et al.*, (2002:268) there are instances where an 'interpretive' or 'fictionalised' model of biographical writing might devote the minimum attention to original research and primary documents.

The degree of awareness of HIV/AIDS

The themes which addressed this issue identified the knowledge level of respondents about HIV/AIDS and their belief in its existence. Emphasis was put on their knowledge of the mode of transmission of the virus through blood-on-blood contact, because of the potential that accidents in the mine might also facilitate the spread of HIV.

The respondents' knowledge of AIDS was minimal. All that the respondents knew about the epidemic is that AIDS is a killer disease, but they did not know exactly how it is transmitted, how it can be prevented and so on. However, the majority was aware that the disease was spread by means of sexual contact. This is illustrated by the following response:

1. 'AIDS is a recent sexually transmitted disease that comes about when you sleep with many women without protection.'

Another typical response was:

2. 'AIDS is a disease that comes mainly via sexual contact and it kills, but can be prevented by using condoms.'

Most of the respondents had gained their knowledge of AIDS from other people. Thirty-four of the fifty respondents (68%) first heard about the epidemic at the mine, from their 'shift bosses', colleagues, friends or from training about AIDS conducted at the mine.

One respondent said:

3. 'I've heard that when you have AIDS, which comes with unprotected sex, you loose weight until you die. But I've never seen it.'

This is an indication of some misconceptions about the transmission of the virus. HIV is an infectious disease, but there are only certain situations in which people who have the virus can pass it on to others, and these are:

- Sexual intercourse is the most common way through which people become infected, because the virus survives in sperm and vaginal fluids.
- Babies born to mothers with HIV can also be infected just before and during birth, or during breastfeeding.
- Infected blood can spread the virus if, for example, it splashes on broken skin or by sharing blades, razors or toothbrushes.
- Drug addicts who share unsterilised needles can infect each other.

Although blood used in transfusion is screened against the virus, errors sometimes occur and occasionally blood transfusion may be a cause of infection (Department of Education, 2000).

Regarding the extent to which respondents believed in the existence of HIV/AIDS, one respondent said:

1. 'People talk about it a lot. Even TVs and radios are forever on AIDS.'

Some believed in the disease because they had seen people suffering from the disease, either personally or on TV, or had heard that people they knew died of AIDS. One said:

2. 'Though I haven't seen anyone with AIDS personally, I've seen how people die of the disease on TV, hence I believe it exists.'

A few respondents had actually attended funerals of people, including relatives, who had died of the disease. One said:

3. 'I have seen people dying of AIDS hence I believe it exists. I've also buried four of the victims.'

Another respondent who first heard of the disease at home said:

4. 'The person who was buried was my brother's son who died of AIDS, so I strongly believe it exists.'

Although the majority believed that AIDS existed, there were respondents who did not believe in such a condition, because they did not believe in sexually transmitted diseases. They were adamant that it was like any other disease that can be cured or because they had never seen 'it'. One respondent said:

5. 'I don't believe that AIDS exists. They say it comes with sexual contact, but there is no disease that can emanate from sex.'

The other who felt that AIDS is curable said:

6. 'I believe that diseases within a person are different and are all curable. AIDS is no exception. I don't believe it kills.'

At present, there is no medicine that can prevent infection, and there is no cure for HIV/AIDS. Some drugs, like AZT and Nevirapine, enable the body to defend itself against the disease, but these are expensive and not accessible to many people in the country.

There were mixed responses from the respondents regarding the importance attached to condom use. It was established above that the majority of the respondents were knowledgeable about the modes of HIV transmission and preventative measures. However, this knowledge does not necessarily translate into a personal perception of risk or appropriate changes in behaviour. Since mineworkers did not perceive themselves or their partners to be at risk of infection, unprotected sex was common. To the mineworkers, extra partners replaced their wives by giving them some sense of the belonging and intimacy that they would otherwise get from their wives, but the reality of the matter is the possible infection with the virus.

A majority of respondents felt that co-workers with the virus should continue with their respective jobs in order to support their families. Their responses depicted a strong bond amongst them. They were aware of one another's economic background; hence they felt that victims of HIV should still be in employment to support their families.

The ultimate stage of the virus is full-blown AIDS. At this stage, in most cases symptoms such as weight loss and balding start to show. Chronic diarrhoea is also common. A majority of respondents, having heard of the symptoms or having seen AIDS victims, felt that co-workers with full-blown AIDS should be put off work and be given sick pensions. This was based on the fact that people suffering from AIDS would not cope with duties performed in the mine, which demand physical strength. Some of them looked at the situation from an economic perspective and felt that the longer people with AIDS stayed on board; the more there would be a decline in production.

Recommendations

Based on the results of this study, the following recommendations are proposed for future research, policy making and practice in the area of HIV/AIDS. These will be in line with the factors influencing the perceptions of mineworkers regarding the epidemic.

Future research

In the light of the fact that studies probing into the world of mineworkers in the area of HIV/AIDS in this mine have not been done, further studies should be undertaken on a wider scale in order to generate a better and more general view of the perceptions of mineworkers on AIDS. In further studies in this area, the target group should not only be confined to mineworkers, because they do not live in isolation from the rest of the community. People living around the mining areas, and more specifically commercial sex workers, should be part of the target population because of the potential of the sex industry to spread the virus.

Policy making

It has been established in the data that loneliness is one of the major factors directly impacting on the sexual behaviours of many miners. The majority of mineworkers under study live in hostels where there is no privacy and where there are only limited facilities for wives and families to stay. Even though a few miners do stay with their wives in the hostels, the environment is not conducive for families to settle. For such reasons, these men seek intimate comfort from casual partners around the mining communities to help them cope with the stress of the living conditions over which they do not have control.

Since their self-efficacy is low, in the midst of their sexual encounters the risk of contracting the HIV virus appears small relative to the desire to fulfil their sexual needs, a perception which reduces the likelihood that they will execute precautionary measures. One way of discouraging the miners from using the services of commercial sex workers and of limiting their sexual movements would be to provide them with formal housing to cater for their families. This strategy has been adopted by the New Vaal Colliery mine, where hostel quarters have been converted into family units. In this way, their sexual lifestyles would change and contact with commercial sex workers and other extra-marital partners would be reduced. For this to be effective, it should be a policy applicable to all mineworkers and not an option.

Practice

Because sexual behaviour is often not determined by rational and conscious decisions, it is not surprising that educating people and giving them information about the dangers of HIV/AIDS does not always persuade them to give up having unprotected sex. In some cases, society and traditional customs determine human behaviour much more strongly than education and knowledge. The study has shown the limitations inherent in trying to change people's behaviour through giving them information, because there is a limited correlation between the provision of training regarding AIDS on the one hand, and the attitudes and perceptions the miners have about AIDS and the empowerment to be able to act on that knowledge, on the other hand.

One of the best practices in achieving this correlation would be to give the epidemic a human face, through involving

people (in this case, mineworkers) in interventions geared at creating awareness and at combating the epidemic. This participatory approach should encourage the development of an environment that supports people in changing their behaviour through encouraging their participation in particular HIV prevention programmes. Being part of these interventions would give the miners some sense of ownership of the interventions, and would therefore make them feel responsible for changing their own sexual behaviour.

Limitations of the study

Because of practical constraints such as the funds and time, the study could only concentrate on one mine instead of the entire mining industry. Therefore, one could argue that the findings are not necessarily a generalisation of all mineworkers' level of awareness and attitudes about HIV/AIDS. It does, however, serve as a point of reference for policy making and future research.

Conclusion

The study has identified the knowledge, attitudes, behaviour and perceptions of mineworkers regarding HIV/AIDS. Factors that have an impact on how the mineworkers view HIV/AIDS from a socio-cultural perspective and a political view have also been classified. Even in cases where there is sufficient knowledge about the disease, much still needs to be done to ensure that they act on that knowledge. The attitudes the respondents exhibit towards the epidemic and its victims are indicative of the vicious cycle of fear, stigma and denial.

This coupled with the socio-cultural and traditional customs they believe in, reduces the likelihood of instituting precautionary measures, particularly the use of condoms, as well as altering their sexual behaviours. The living and working conditions in the mine are such that the risks associated with contracting AIDS are not the miners' uppermost concern. The overall perception gathered through the data clearly indicates that AIDS is not yet a reality in their lives.

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